



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Hongxing TANG et al.
Title: STRAIN SENSORS BASED ON NANOWIRE
PIEZORESISTOR WIRES AND ARRAYS
Appl. No.: 10/826,007
Filing Date: 4/16/2004
Examiner: George P. Bonanto
Art Unit: 2855
Conf. No.: 9207

INFORMATION DISCLOSURE STATEMENT
UNDER 37 CFR §1.56

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

07/11/2006 HALI11 00000130 10826007

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TIMING OF THE DISCLOSURE

The listed documents are being submitted in compliance with 37 CFR §1.97(c), before the mailing date of either a final action under 37 CFR §1.113, a notice of allowance under 37 CFR §1.311, or an action that otherwise closes prosecution in the application.

RELEVANCE OF EACH DOCUMENT

All of the documents are in English.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

FEE

A credit card payment form in the amount of \$180.00 is enclosed in accordance with 37 CFR §1.17(p) to cover the fee associated with an information disclosure statement under 37 CFR §1.97(c) in the amount of \$180.00.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

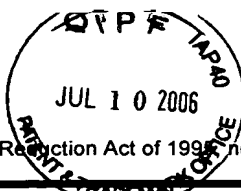
Respectfully submitted,

Date 7/10/06

By 

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Attorney for Applicant
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Substitute for Form 1449B/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Date Submitted: July 10, 2006

(use as many sheets as necessary)

Complete if Known

Application Number	10/826,007
Filing Date	04/16/2004
First Named Inventor	Hongxing TANG
Group Art Unit	2855
Examiner Name	George P. Bonanto
Attorney Docket Number	049411-0268

Sheet 1 of 3

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
	B1	2002/0175408	A1	MAJUMDAR et al.	11/28/2002	
	B2	2003/0203531	A1	SHCHUKIN et al.	10/30/2003	
	B3	2005/0109925	A1	EL RIFAI et al.	05/2005	
	B4	2005/0150280	A1	TANG et al.	07/14/2005	
	B5	2005/0212529	A1	HUANG et al.	09/2005	
	B6	3,034,345		MASON	05/15/1962	
	B7	5,266,801	A	ELINGS et al.	11/1993	
	B8	6,075,585	A	MINNE et al.	06/2000	
	B9	6,185,991	B1	HONG et al.	02/2001	
	B10	6,784,074	B2	SHCHUKIN et al.	08/31/2004	
	B11	6,882,051	B2	MAJUMDAR et al.	04/19/2005	
	B12	6,887,365	B2	NAUGHTON, Michael J.	05/03/2005	
	B13	6,945,099	B1	SU et al.	09/2005	

U.S. PATENT APPLICATION DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Application Document		Name of Patentee or Applicant of Cited Document	Filing Date of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Serial Number	Kind Code ² (if known)			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Office ³	Number ⁴	Kind Code ⁵ (if known)			
	B14	WO	2003/095616	A2	California Inst. of Tech.	11/20/2003	
	B15	WO	2003/095617	A2	California Inst. of Tech.	11/20/2003	
	B16	WO	2004/041998	A2	California Inst. of Tech.	05/21/2004	

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ⁶
	B17	MELOSH et al., "Ultrahigh-Density Nanowire Lattices and Circuits," Science, April 4, 2003, vol. 300, pp. 112-115.	

Examiner
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¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT Date Submitted: July 10, 2006 <i>(use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/826,007
				Filing Date	04/16/2004
				First Named Inventor	Hongxing TANG
				Group Art Unit	2855
Examiner Name	George P. Bonanto				
Attorney Docket Number	049411-0268				
Sheet	2	of	3		

NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ⁶
	B18	HROVAT et al., "A characterisation of thick film resistors for strain gauge applications," J. Mater. Sci., 2001, vol. 36, pp. 2679-2689.		
	B19	KNIGHT et al., "Effect of Structure on the Piezoresistive Properties of Thin Metal Films," J. Vac. Sci. Technol., 6, 706-710, 1969.		
	B20	CHUNG et al., "Micromachined metal thin-film pressure sensor suitable for batch process," Electronics Letters, October 24, 2002, vol. 38, no. 22, 1344-1346.		
	B21	PATTABI et al., "A simple strain cell for the measurement of gauge factor of a thin film," Rev. Sci. Inst., April 1999, vol. 70, no. 4, pp. 2074-2075.		
	B22	BISHAY et al., "Applicability of discontinuous palladium films as strain gauges," J. Mater. Sci., 1992, vol. 3, pp. 195-199.		
	B23	JEN et al., "Piezoresistance characteristics of some magnetic and non-magnetic metal films," J. Magn. Magn. Mater., 2003, vol. 256, pp. 54-62..		
	B24	MCGUIRE et al., "Anisotropic Magnetoresistance in Ferromagnetic 3d Alloys," IEEE Trans. Mag-11, July 4, 1975, no. 4, pp. 1018-1038.		
	B25	RAJANNA et al., "Pressure transducer with Au-Ni thin-film strain gauges," IEEE Trans. Electron Devices, March 1993, vol. 40, no. 3, pp. 521-524.		
	B26	SAMPATH et al., "Behaviour of Bi-Sb alloy thin-film strain gauges," Thin-Solid Films, 1986, 137, pp. 199-205.		
	B27	CHIRIAC et al., "Ni-Ag thin films as strain-sensitive materials for piezoresistive sensors," Sensors and Actuators A, 1999, vol. 76, pp. 376-380.		
	B28	LEI et al., "Thin film thermocouples and strain gauge technologies for engine applications," Sensors and Actuators A, 1998, vol. 65, pp. 187-193.		
	B29	GUCKEL et al., "Surface micromachined pressure transducers," Sensors and Actuators A, 1991, vol. 28 (2), pp. 133-146.		
	B30	PATRIDGE et al., "High-performance planar piezoresistive accelerometer," JMEMS, March 1, 2000, vol. 9, no. 1, pp. 58-66.		
	B31	CHUI et al., "Independent detection of vertical and lateral forces with a sidewall-implanted dual-axis piezoresistive cantilever," Appl. Phys. Lett., March 16, 1998, vol. 72, no. 11, pp. 1388-1390.		

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	B32	DEHE et al., "A piezoresistive GaAs pressure sensor with GaAs/AlGaAs membrane technology," J. Micromech. Microeng., 1995, vol. 5, pp. 139-142.	
	B33	HSU et al., "Piezoresistive response induced by piezoelectric charges in n-type GaAs mesa resistors for application in stress transducers," J. Appl. Phys. January 1, 1999, vol. 85, no. 1, pp. 333-340.	
	B34	TANG et al., "Two-dimensional electron-gas actuation and transduction for GaAs nanoelectromechanical systems," Appl. Phys. Lett. November 11, 2002, vol. 81, no. 20, pp. 3879-3881.	
	B35	KONCZEWICZ et al., "GaAlAs-Based Micromachined Accelerometer," Phys. Stat. Sol. B, 2001, vol. 223, pp. 593-596.	
	B36	BYKHOVSKI et al., "Piezoresistive effect in wurtzite n-type GaN," Appl. Phys. Lett. February 5, 1996, vol. 68, no. 6, pp. 818-819.	
	B37	GASKA et al., "Piezoresistive effect in GaN-AlN-GaN structures," Appl. Phys. Lett., December 29, 1997, vol. 71, no. 26, pp. 3817-3819/	
	B38	GASKA et al., "Piezoresistive effect in AlN/GaN short range superlattice structures," J. Appl. Phys. May 1, 1999, vol. 85, no. 9, pp. 6932-6934.	
	B39	HARLEY et al., "High-sensitivity piezoresistive cantilevers under 1000 Å thick," Appl. Phys. Lett., July 12, 1999, vol. 75, no. 2, pp. 289-291.	

Examiner Signature		Date Considered	
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